

NYPSC's Petition does not present any evidence that the second carrier in the MSAs could not rapidly increase its share. Indeed, in two of these MSAs, the smaller firm apparently gained ten percentage points of market share in just one year, suggesting that the larger rival is unlikely to be dominant.<sup>74/</sup> Further, as discussed above, these carriers are likely to face substantial additional competition and entry in the near future.

#### **4. The NYPSC's Conclusion That Cellular Service Is An Essential Service Is Erroneous**

The NYPSC implies that increased usage of cellular service renders it an essential service.<sup>75/</sup> In support of its essential services claim, the NYPSC assumes that cellular phones are necessary "as an added source of safety" in these crime-ridden times.<sup>76/</sup> Neither the statute, the Commission's Second Report and Order nor economic theory support the claim that increased usage of cellular service is an indication that cellular service is an essential service.

Essential services are services with extremely inelastic demand. Presumably, by "essential" the NYPSC means that the industry demand curve for cellular service is inelastic with respect to the price of cellular service.<sup>77/</sup> Growth in usage, however, is not evidence of substantial inelasticity of industry demand. Nor does an industry demand curve provide a rationale for government regulation of an industry. An inelastic industry demand curve is

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<sup>74/</sup> Id.

<sup>75/</sup> NYPSC Petition at 12 ("As the problems of crime and violence reach the highways and streets, more and more people are using cellular phones as an added source of safety. No longer can a consumer, who is dissatisfied with rate or discriminatory practices, easily decide to forego this service.").

<sup>76/</sup> NYPSC Petition at 12.

<sup>77/</sup> Owen Declaration at ¶ 51.

compatible with competition and with highly elastic demand curves for individual firms.<sup>78/</sup> Indeed, cellular services, priced at a level at which demand is inelastic, demonstrate that cellular providers are not coordinating their pricing to maximize joint profits.<sup>79/</sup> Such inelasticity would not justify regulation because it does not measure the elasticity of demand at the firm level.

**5. There Is No Merit In The NYPSC's Inference That Anticompetitive Behavior Is Occurring Because There Has Been An Increase In Complaints**

The NYPSC suggests that there has been a large "percentage" increase in complaints regarding cellular service.<sup>80/</sup> There are many possible explanations for complaints, however, and an inference cannot be made that rate regulation is warranted simply because complaints in general have increased.<sup>81/</sup> On the contrary, the existence of a large "percentage" increase in complaints, when starting from a small base, does not imply a high absolute level of complaints.<sup>82/</sup> Significantly, the NYPSC concedes the critical point that the number of complaints remains "low."<sup>83/</sup>

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<sup>78/</sup> Id.

<sup>79/</sup> Id. at ¶ 50-51. Relying on a study by Hausman comparing rates in regulated and unregulated states, Owen notes that state regulation of the cellular market has not reduced rates. Id. at ¶ 47.

<sup>80/</sup> NYPSC Petition at 9-10.

<sup>81/</sup> Owen Declaration at ¶ 57.

<sup>82/</sup> Id.

<sup>83/</sup> NYPSC Petition at 10.

**C. Retention Of The NYPSC's Regulatory Scheme Is Unnecessary, Costly, And Would Fail To Effectively Regulate CMRS**

**1. Federal Remedies Are Adequate To Address The Competitive Concerns Raised By The NYPSC**

As demonstrated above,<sup>84/</sup> the Commission has held that the federal regulatory framework is sufficient to remedy competitive abuses or unjust and discriminatory rates.<sup>85/</sup> Market conditions in New York are similar to those considered by the FCC and found not to warrant CMRS regulation. Thus, the NYPSC failed to demonstrate that existing federal remedies are inadequate to protect consumers. In support of its claim that rate regulation in New York is necessary, the NYPSC relies heavily upon the Commission's statement that the cellular market is not fully competitive.<sup>86/</sup> This reliance is misplaced. While the FCC stated that the record did not support a finding that the cellular market is fully competitive, it properly recognized that conditions in the CMRS market are sufficiently competitive to warrant forbearance from requiring, or even permitting, CMRS providers to file tariffs.<sup>87/</sup> Indeed, the Commission concluded that compliance with Sections 201, 202 and 208 of the Act was sufficient to protect consumers.<sup>88/</sup> The NYPSC has not presented any evidence that New York consumers would not be protected by these federal remedies, which are available to address any abuses identified by the states.

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<sup>84/</sup> See p. \_\_\_\_, supra.

<sup>85/</sup> Second Report and Order at 1478.

<sup>86/</sup> NYPSC Petition at 3.

<sup>87/</sup> Second Report and Order at 1478-79.

<sup>88/</sup> Id.

The continued applicability of Sections 201, 202, and 208 will remain as consumer protective measures in the event of market failure. The just and reasonable rate requirements of Section 201 and the prohibition on unjustly and unreasonably discriminatory rates of Section 202 "will provide an important protection in the event there is a market failure."<sup>89/</sup> Further, denial of the NYPSC's petition would not leave New York consumers without recourse<sup>90/</sup> because "the Section 208 complaint process would permit challenges to a carrier's rates or practices and full compensation for any harm due to violations of the Act."<sup>91/</sup> The complaint process would provide sufficient recourse and resolution of carrier-carrier or customer-carrier disputes. In light of these adequate federal remedies, state regulation clearly is not necessary in order to protect consumers.

The NYPSC has not presented any evidence of anticompetitive or discriminatory practices, systematic unreasonable rates or discriminatory rates imposed upon subscribers, or any other evidence of market conditions that warrants additional regulation at the state level. The Commission must deny the NYPSC's Petition.

**2. The NYPSC Has Failed To Show That Any Residual Risks To Consumers Outweigh The Substantial Costs Associated With Regulation**

While the NYPSC claims that state rate regulation is necessary to prevent rates from becoming unjust and unreasonable, it has not presented evidence that its rate regulation is the

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<sup>89/</sup> Id.

<sup>90/</sup> NYPSC Petition at 12.

<sup>91/</sup> Second Report and Order at 1479.

appropriate response and that such regulation produces net benefits.<sup>92/</sup> While there may be benefits to regulation, the inquiry does not end there. The NYPSC must demonstrate that any benefits of state rate regulation outweigh the administrative costs attendant to such regulatory requirements.

The Commission has determined that tariff requirements are "not necessary to ensure that the charges, practices, classifications or regulations for or in connection with CMRS are just and reasonable and are not unjustly or unreasonably discriminatory."<sup>93/</sup> Rate regulation, with its attendant filing and reporting requirements, imposes administrative costs upon carriers that could actually harm consumers by leading to increased rates for consumers.<sup>94/</sup> Forbearance from tariffing requirements will encourage competition that will increase consumer benefits.<sup>95/</sup> As the NYPSC itself observes, "[t]here have been very few instances in which cellular rates have required hearings."<sup>96/</sup>

Nonetheless, the NYPSC asserts that its tariffing requirements allow review of rate changes and new rate plans to prevent anticompetitive and discriminatory practices.<sup>97/</sup> The NYPSC offers only two examples as proof of the success of its tariff review process. In one instance, after the NYPSC's review of a tariff filing, it informally recommended that the cellular

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<sup>92/</sup> NYPSC Petition at 8. NYPSC also claims that its rate regulation ensures that rates are just and reasonable and are not unjustly and unreasonably discriminatory. Id. at 2-3.

<sup>93/</sup> Second Report and Order at 1478.

<sup>94/</sup> Second Report and Order at 1479.

<sup>95/</sup> Id.

<sup>96/</sup> NYPSC Petition at 6.

<sup>97/</sup> Id.

carrier revise the special pricing plan because the NYPSC perceived it to be discriminatory.<sup>98/</sup> In another instance, the NYPSC assisted in resolving a dispute between two cellular carriers over roaming rates.<sup>99/</sup> In both of these situations, however, the customers or carrier at issue would be adequately protected by federal remedies. Moreover, with respect to roaming, if roaming disputes become common in the future, Federal relief will be particularly appropriate since many disputes will revolve around interstate communications and require a consistent national approach to be resolved efficiently. The NYPSC has not shown through these examples, or by any other events in the New York CMRS market, that its rate regulation produces benefits that exceed the significant costs of such regulation.

To the contrary, tariffing requirements can promote the very anticompetitive practices that the NYPSC is trying to prevent. Tariff filings impede carriers from making quick, efficient responses to changes in demand and cost. Though intended to protect consumers and promote competition, rate regulations will only harm consumers and discourage competition over time. The retention of the NYPSC's tariffing requirements would "impede and remove incentives for competitive price discounting" and "impose costs on carriers that attempt to make new offerings."<sup>100/</sup> Forbearance from these tariffing requirements, however, will promote competitive market conditions and enhance competition among CMRS providers.<sup>101/</sup> The Commission's findings that tariff filings would enable carriers to ascertain competitors' prices

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<sup>98/</sup> Id. at 10.

<sup>99/</sup> Id. at 10-11.

<sup>100/</sup> Second Report and Order at 1479.

<sup>101/</sup> Id.

and any changes to rates, which could encourage carriers to maintain rates at an artificially high level, remain unrefuted by the NYPSC.<sup>102/</sup>

Although the NYPSC claims that its tariff and other extensive filing requirements do not prevent entry of new carriers,<sup>103/</sup> the Commission has found that such tariffing imposes administrative costs that can be a barrier to competition.<sup>104/</sup> Cellular providers do face competition today and competition is increasing, rendering tariffing requirements unnecessary.<sup>105/</sup> Indeed, the NYPSC has acknowledged that the entry of PCS service providers "may provide a viable substitute for cellular service and therefore reduce the need for continued rate regulation of cellular carriers."<sup>106/</sup> The NYPSC has not demonstrated that the Commission's conclusion that "there is sufficient competition in this marketplace to justify forbearance from tariffing requirements,"<sup>107/</sup> is inapplicable to the New York market. Contrary to the NYPSC's claim, the requirements to file tariffs, audited financial statements, annual reports with operating data, plant in service, liabilities, operating revenues and expenses, as well as fulfill consumer protection obligations, not only constitute barriers to competition, but also result in increased rates for consumers.<sup>108/</sup>

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<sup>102/</sup> Id. at 1479-1480.

<sup>103/</sup> NYPSC Petition at 7.

<sup>104/</sup> Second Report and Order at 1479.

<sup>105/</sup> Id. at 1479-80.

<sup>106/</sup> NYPSC Petition at 5, n.1.

<sup>107/</sup> Second Report and Order at 1478.

<sup>108/</sup> Id. at 1479.

Market conditions must be shown to have failed to adequately protect subscribers from unjust and unreasonable rates or unjustly and unreasonably discriminatory rates. The NYPSC surmises that elimination of state regulation "may" have a detrimental effect on the reasonableness of rates and will give carriers an incentive to engage in discriminatory and anticompetitive practices. Speculation about the effects of the removal of state regulation is an insufficient justification for regulation that is, at the outset, presumed burdensome and unnecessary. "Preventive government" is not sufficient justification to require the burdensome tariff filing requirements that the NYPSC imposes.

### Conclusion


The Commission should deny the NYPSC's request for rate regulation authority. The NYPSC has failed to satisfy the statutory prerequisites to the grant of such authority.

Respectfully submitted,

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**EXHIBIT A**

BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C.

In the Matter of Implementation  
of Sections 3(n) and 332 of the  
Communications Act: Regulatory  
Treatment of Mobile Services

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GN Docket No. 93-252

**Declaration of Bruce M. Owen on the New York Petition**

**I. Qualifications**

1. I am an economist and president of Economists Incorporated, an economic consulting firm located at 1233 20th Street, N.W., Washington, D.C. 20036. I am also a visiting professor of economics at Stanford University's Washington, D.C. campus. I hold a Ph.D. in economics from Stanford University (1970) and a B.A. in economics from Williams College (1965). My fields of specialization are applied microeconomics and industrial organization, especially antitrust economics and regulation of industry. I have published a number of books and articles in these fields, including "*United States v. AT&T: The Economic Issues*" (with R. Noll, in J. Kwoka and L. White, eds., *The Antitrust Revolution*, Scott, Foresman, 2nd ed., 1994), *Video Economics* (with S. Wildman, Harvard University Press, 1992), and *The Regulation Game* (with R. Braeutigam, Ballinger, 1978). I have taught economics as a full-time member of the faculties of Duke University and Stanford University. From 1979 to 1981 I was the chief economist of the Antitrust Division of the United States Department of Justice. During 1971-1972 I was the chief economist of the White House

Office of Telecommunications Policy. I have testified in a number of antitrust and regulatory proceedings, including ones relating to local exchange, interexchange, and cellular telephony as well as paging. A copy of my curriculum vitae is attached to this declaration.

## II. Introduction and Summary

2. I have been asked by counsel for McCaw Cellular Communications, Inc., to provide an economic analysis of Public Service Commission, State of New York, "Petition to Extend Rate Regulation" (PR File No. 94-SP6, Aug. 5, 1994 (NYPSC Petition)). This section summarizes my conclusions. Section III examines the arguments made by the New York State Public Service Commission (NYPSC) in support of regulation of commercial mobile radio service (CMRS) providers. Sections IV and V evaluate the effectiveness and costs of regulation, and Section VI addresses implications of granting the NYPSC petition. VII is a conclusion.

3. The Federal Communications Commission (Commission) should not grant the NYPSC's petition. The Commission has recently concluded that relevant markets are sufficiently competitive to justify forbearance from regulation of cellular and other CMRS providers (*CMRS Second Report*, 9 FCC Rcd 1411 (1994) at ¶¶135, 145). Nothing in the NYPSC petition undermines this conclusion. This is true regardless of which CMRS prices one is considering, for example, wholesale and/or retail prices for access, air time, roaming, or enhanced services.

4. The key question with respect rate regulation is whether it is likely to be cost-effective in the future world to which it will be applied. It is generally acknowledged that the CMRS market is becoming more competitive as a result of changes in technology and various Commission initiatives that will permit or promote entry. Because the case for regulation cannot be justified based on evidence regarding past and present conditions, clearly there is no basis for continuing or future regulation.

5. *First*, the Commission has already found that "CMRS providers do not have control over bottleneck facilities" (*CMRS Second Report* at ¶237).

In the case of cellular carriers this conclusion is clearly correct. For example, new CMRS systems do not need to interconnect with cellular networks (as opposed to the facilities of local exchange carriers (LECs)) in order to enter the mobile communications market successfully.

6. *Second*, no one, including the NYPSC, has demonstrated that the presence today of only two cellular providers in each area has resulted in anticompetitive behavior, including supra-competitive pricing.<sup>1</sup> Without such a demonstration, no case can be made for regulation of CMRS prices. The NYPSC has offered analyses and data that allegedly demonstrate that cellular carriers have been exercising market power. None of them, individually or collectively, demonstrates the exercise of market power. Claims about anticompetitive behavior are based on faulty economic analysis. By contrast, there is evidence of sufficient competitive behavior and benefits to consumers to justify continued forbearance from economic regulation.

7. *Third*, additional CMRS providers will soon offer competitive cellular-like services. As new CMRS providers establish themselves, any possibility that cellular carriers could acquire or exercise market power is eliminated. Entry by new competitors will be facilitated by the rapid growth in demand for and sales of mobile services.

8. *Fourth*, if state regulation of prices of cellular services were in the public interest, the NYPSC should be able to demonstrate benefits from past state regulation. If there were benefits, one ought to be able to observe them by comparing states that regulated with states that did not. However, there is no evidence in the NYPSC petition or elsewhere that regulation of cellular service prices in New York or other states has had any beneficial effect in the past.

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<sup>1</sup> See my declarations analyzing the petitions of other states in this proceeding, and my declaration submitted in CC Docket 94-54 (In the Matter of Equal Access and Interconnection Obligations Pertaining to CMRS, September 12, 1994).

9. *Fifth*, spectrum is inherently scarce, and the supply of spectrum available for CMRS services is further constrained by Commission spectrum allocation policies. To achieve an efficient allocation of the spectrum available for CMRS services, the prices of CMRS services must reflect the opportunity costs of scarce spectrum. This is true regardless of whether current license holders paid for their spectrum rights.

10. *Sixth*, regulation of CMRS prices imposes substantial costs. Price controls limit the ability of regulated firms to respond to changes in technology and in cost and demand conditions, and deter new investments, quality improvements, introduction of new services, and entry by reducing returns on pro-competitive activities. The distortionary effects of price regulations that limit returns on investments are likely to be greatest in industries such as CMRS that are characterized by rapid growth, technological change, and relatively high risk.

11. Based on my review of the evidence, it is my opinion that there is no empirical basis for believing that there is a problem with market performance that would warrant regulating CMRS pricing. Thus, the Commission's conclusion that the market is sufficiently competitive to justify forbearance from regulation of cellular and other CMRS carriers is correct. NYPSC regulation of CMRS pricing would therefore be likely to harm consumers. There is nothing special about the nature of CMRS competition or regulation in New York that would change this conclusion.

### **III. Market Structure and Performance**

#### **A. *Importance of Market Structure and Performance***

12. In order to assess any potential regulation, it is useful to begin by considering the implications of leaving decisions to market forces. This is commonly done in an antitrust context by defining a relevant market and then evaluating market concentration, conditions of entry, and other structural and behavioral evidence relating to the likelihood that suppliers are exercising, or may come to exercise, unilateral or collusive market power. If market power is being exercised or is likely to be exercised in

the future, then regulatory interventions may have benefits in preventing or stemming exclusionary or other anticompetitive behavior. Even if such benefits may result, however, they must be weighed against the fact that the regulatory intervention will impose its own costs, distortions, and disincentives. It would be wrong to assume that an imperfect market can be replaced with perfect regulation.

13. The remainder of Section III is devoted to an analysis of the NYPSC's discussion of the structure and performance of the CMRS markets in which cellular services compete.

## **B. Market Definition**

### **1. Purpose of Market Definition**

14. To be useful in analyzing competitive conditions, market shares and concentration must be computed for properly defined antitrust markets. A group of products or services and an associated geographic area constitutes an antitrust market if it is the smallest set of products and the smallest area capable in principle of being profitably monopolized. In other words, if one assumed that a hypothetical single firm controlled the supply of all the products in question, and if that firm could increase its profits by raising prices significantly above competitive levels, then an antitrust market has been defined. However, if a price increase by a hypothetical single firm would be unprofitable because consumers would switch in significant numbers to other products, then the market has been defined too narrowly for antitrust analysis.

### **2. Relevant Product Markets**

15. Cellular services may be competitive with certain landline services, such as intra-LATA toll service, pay telephone service, and telemetry service (*Financial Services Report*, May 25, 1994; *Electric Utility Week*, Aug. 29, 1994, at 7). Cellular services would be competitive with additional landline services but for the fact that residential local exchange services are priced below costs. For customers with relatively long local loops, land-

line service costs are likely to be similar to or greater than cellular service costs. To analyze some policy issues, it is therefore appropriate to define relevant antitrust markets that include both cellular and landline services. Nevertheless, for the purposes of the present declaration I make the conservative assumption that landline services are not in the relevant product market in which cellular and cellular-type services compete.

16. Among the relevant product markets in which cellular services may compete, the one that is now, and is likely to remain, most concentrated is *mobile telecommunications services*, which I define as the collection of services of the type that cellular and broadband personal communications services (PCS) offer or will offer within the next three to five years. As I will explain further below, at a minimum the participants in this market include cellular providers and broadband PCS providers with at least 20-30 MHz of spectrum. Participants are also likely to include broadband PCS licensees with 10 MHz of spectrum and enhanced specialized mobile radio (ESMR) providers with 5-10 MHz of spectrum. There may eventually be other participants as well, such as satellite-based services. Also, in some cases consumers are likely to be in a position to substitute landline telephone, paging, and two-way mobile radio services for cellular-type services.

17. The definition of the mobile telecommunications services market used in this declaration is based on the fact that cellular, PCS, and ESMR licensees are all authorized by the Commission to provide the full array of mobile services (Stanley M. Besen and William B. Burnett, "An Antitrust Analysis of the Market for Mobile Telecommunications Services," Charles River Associates, Dec. 1993, at 1 n.1, and at 17-18). It is also based on the conclusion that "all portions of the electromagnetic spectrum that have been allocated to the provision of mobile telecommunications services can be used to provide all of the same services and at about the same cost" (Besen and Burnett at 18).

18. My definition of a relevant antitrust product market for mobile telecommunications services is consistent with the analysis of Besen and

Burnett, who define a single relevant antitrust market for all mobile services, including cellular, PCS, and ESMR. In their discussion of the market, Besen and Burnett include services such as paging that require only limited amounts of spectrum. However, in computing concentration in the market, they include only cellular providers, broadband PCS providers (which will have at least 10 MHz of spectrum as a result of Commission licensing), and—in some of their calculations—ESMR providers with 5-10 MHz of spectrum.

19. Cellular systems may also compete in narrower relevant product markets, such as *wireless data transmission services* and *paging services*. However, any such narrower product market that may exist would have more participants and be less concentrated than the market defined for mobile telecommunications services. Because of the additional competitors and scope for entry in a narrower market, insofar as the regulations at issue in the present proceeding are concerned no additional competitive issues are likely to arise in such markets that do not arise in a market for mobile telecommunications services.

### 3. Relevant Geographic Markets

20. Mobile telecommunications service suppliers compete in providing services in connection with both local and long-distance calls. The precise geographic areas appropriate for analysis of both local and long-distance calls is complicated by the fact that the relevant licensees (cellular A, cellular B, broadband PCS A and B, broadband PCS C-F, and ESMR) serve or will serve different, overlapping areas.

21. In order to define geographic markets in any specific situation, one must determine the extent of feasible geographic price discrimination. To the extent that price discrimination is not feasible, and uniform prices must be charged over a wide geographic area, geographic markets will be broader than if price discrimination is feasible. The broader are geographic markets, the greater will be the number of participants in the markets, and the lower will be concentration. For example, if the geo-

graphic market is broader than the Basic Trading Areas (BTAs) used for some of the broadband PCS licenses, the number of broadband PCS competitors in the market will exceed the number of licenses (including Major Trading Area (MTA) licenses) valid in any single BTA. The market share and concentration measures computed below, as well as those presented by Besen and Burnett and others, are likely to be biased upward because they are based on the implicit assumption that cellular licensees in different MSAs and PCS licensees in different BTAs are not in the same antitrust geographic markets (Besen and Burnett at n. 46 make the same point).

C. *Competitors for Cellular in Mobile Telecommunications*

1. Broadband Personal Communications Services

22. Digital personal communications services are being licensed in two portions of the radio spectrum. Broadband PCS will be in the 1850-1990 MHz range, while narrowband PCS will be in the 900 MHz range. There will be three 30 MHz broadband licenses and three 10 MHz broadband licenses.

23. There is general agreement that at least the 30 MHz broadband PCS licensees will compete with cellular providers. One observer has predicted that "broadband PCS systems will evolve primarily into cellular competitors. ... [E]conomic factors all suggest that the larger PCS systems, say 30 MHz MTA-wide systems, necessarily must target cellular subscribers ... to become their customers" (*Cellular Business*, March 1994, at 14, 16). According to Commissioner Andrew C. Barrett, "The three 30 MHz allocations, two at the MTA level and one at the BTA level, will provide significant opportunities for new entrants to compete against cellular providers and the emerging Enhanced Specialized Mobile Services market. This new framework achieves one of my policy goals of ensuring that at least three new PCS providers have a real opportunity to offer competitive alternatives to existing cellular players" (TR, June 13, 1994, at 5). A Commission staff report suggests that competitive PCS services can generally be offered

with 20 MHz of spectrum (David P. Reed, *Putting It All Together: The Cost Structure of Personal Communications Services*, Federal Communications Commission, Office of Plans and Policy, 1992, at vii-ix). In addition, the Commission has stated that "narrowband PCS services may compete with cellular to some extent" (*CMRS Second Report* at ¶148).

24. Industry predictions suggest that PCS systems may have advantages over cellular systems, for example, additional service options, superior voice quality, smaller, lighter, cheaper handsets, and perhaps lower costs (*TR Wireless News*, June 30, 1994). Time Warner Telecommunications has been testing a technology that would make use of existing cable television plant to reduce the cost of deploying PCS services (*Multichannel News*, June 6, 1994, at 2). According to one industry analysis, "Putting all of these factors together, it does seem that PCS has at least a fighting chance to significantly underprice cellular services" (*TR Wireless News*, July 14, 1994).

25. One indication that those in a position to have the best information believe that PCS systems will be significant competitors is the substantial interest in, and the prices that companies are expected to bid for, PCS licenses.

26. Three pioneer preference 30 MHz MTA licenses have been awarded by the Commission. Remaining broadband PCS licenses presumably will be awarded next year. Thirty MHz broadband PCS licensees are required by the Commission to offer service to at least one-third of the population of their market areas within 5 years and two-thirds within 10 years. Ten MHz licensees will be required to cover 25 percent within 5 years or, alternatively, to submit a showing of "equivalent or substantial service" (*TR*, June 13, 1994, at 5).

## 2. Enhanced Specialized Mobile Radio Services

27. Specialized Mobile Radio (SMR) and ESMR service, like cellular service, uses spectrum in the 800-900 MHz range. The Commission has allocated 19 MHz to SMR/ESMR (*CMRS Second Report* at n. 296). In part be-

cause of restrictions imposed by the Commission, SMR has been used primarily for fleet radio-dispatch service. While most SMR systems currently use analog technology, according to a recent study 23 percent of the SMR industry is planning to implement digital technology in the next year. Digital technology will substantially increase capacity and permit firms to offer ESMR service, including integrated voice, messaging, paging, dispatch, and data services (*Land Mobile Radio News*, April 1, 1994; *Communications Week*, June 6, 1994, at 33).

28. Hausman concludes that "ESMR will provide a close substitute to cellular service" (Jerry A. Hausman, "Affidavit," *United States v. Western Electric Co., et al.*, D.D.C., 1992, at 16). Although ESMR may have certain handicaps compared to cellular (*CMRS Second Report* at ¶143), ESMR may offer a wider array of services. According to an industry analyst, many "customers were using SMR and cellular as two separate services, and now Nextel is offering them a package deal. Nextel also offers some advanced messaging capabilities that only a handful of cellular providers have begun to offer" (*Communications Week*, May 30, 1994, p. 31).

29. Nextel, Dial Page, and OneComm have been acquiring SMR systems nationwide and entering into agreements to provide regional, and eventually national, ESMR service (*Communications*, April 1994, at 76, 78). Nextel has agreed to merge with Dial Page and OneComm and to acquire all Motorola's SMR operations. Assuming these transactions close, Nextel's licenses will cover approximately 85 percent of the nation's population in bandwidth slices ranging from 10 to 15 MHz per market (*Multichannel News*, Sept. 5, 1994), and it will have more than 650,000 of the reported 1.5 million SMR subscribers nationwide (*TR*, Aug. 8, 1994, at 39-40; *Mobile Satellite News*, Mar. 2, 1994). Because of the large number of systems under common ownership and the common use of the Motorola Integrated Radio System (MIRS) digital technology, Nextel will have advantages in offering seamless national service (*Land Mobile Radio News*, April 1, 1994). Nextel also has equity shares in Canadian and Mexican SMR providers.

30. An important issue is how long it will take ESMR providers to make their services available as substitutes for cellular service. Motorola has introduced handsets for transmitting voice, data, and fax messages over ESMR. According to press reports, Nextel offers ESMR integrated voice, paging, and two-way radio services in a number of areas and expects to offer these services in several other areas, including New York, by the end of 1994, when it expects to begin testing switched data services as well. It expects to begin testing packet switched services in 1995. OneComm plans to offer ESMR service in Denver, Seattle, and Portland, Oregon, in 1994. Dial Page is aiming to offer service in the South and Midwest in 1995. It is also reported that the major "MIRS-based ESMR providers have banded together and said they will offer seamless nationwide service as they deploy their networks during the next 2-1/2 years" (*Communications Week*, June 6, 1994).

**D. Competitors for Cellular in Wireless Data Transmission**

31. Wireless data transmission service will be even less concentrated than cellular-type service because all the providers of cellular-type service will be in the market along with a number of other types of providers.

32. At the local level, cellular providers can offer data services using circuit-switched technology. For example, in Buffalo the non-wireline carrier offers circuit-switched cellular data service for purposes such as remote monitoring (*Communications Daily*, Aug. 3, 1994). Cellular providers are implementing a nationwide network using cellular digital packet data (CDPD) technology. A number of cellular companies have begun using CDPD, including McCaw in Las Vegas and Bell Atlantic Mobile in Baltimore-Washington and Pittsburgh (*Computer Reseller News*, May 23, 1994, at 152; *Financial Services Report*, May 25, 1994). Bell Atlantic has predicted that CDPD will be in the top 60 markets by the end of 1994 (*Advanced Wireless Communications*, May 11, 1994).

33. SMR providers currently can offer wireless data service at the local level. There are also two providers of national wireless data network ser-

vices, both of which are non-cellular: Ardis, owned by Motorola, and RAM Mobile Data, owned by BellSouth and RAM Broadcasting, have packet switched radio networks in large cities nationwide. In addition, satellite-based services offered by companies such as Qualcomm are used heavily by the trucking industry for purposes such as dispatching, messaging, and tracking vehicle and package locations (*En Route Technology*, July 5, 1994).

34. Non-cellular competitors that are entering wireless data service include Metricom, which has a network operating in the Silicon Valley area and hopes that by the end of 1996 the top 30 U.S. metropolitan sites will be equipped and running; Nextel and other ESMR providers; and narrow-band PCS providers, such as Mobile Telecommunication Technologies' National Wireless Network, which is slated for roll-out in mid-1995 (*TELECOMREG Digest*, Aug. 8, 1994; *Computer Reseller News*, April 4, 1994, at 55; *Mobile Data Report*, Feb. 28, 1994). PageNet, which has three national paging frequencies, is also able to provide wireless data services (*Newsbytes News Network*, July 25, 1994).

#### **E. Concentration**

35. The NYPSC cites the existence of high market shares and concentration as evidence in support of regulation. A number of parties have calculated market concentration in mobile telecommunications services using Herfindahl-Hirschman Indexes (HHIs) and have compared these HHIs against standards contained in the Department of Justice and Federal Trade Commission 1992 Horizontal Merger Guidelines. The HHI is calculated by summing the squares of the market shares of the firms in the market. The smaller the number of firms and the more unequal their sizes, the larger the HHI will be, and by definition the more concentrated the market is. For example, if there are five equal-sized firms, each with 20 percent of the market, the HHI equals  $5 \times (20)^2$  or 2000. If the HHI is above 1800, under the Merger Guidelines the market is "highly concentrated."

36. It is widely recognized that the HHI thresholds specified in the Merger Guidelines are not based on empirical evidence concerning the relationship between concentration and the likelihood that market power will be exercised (Paul A. Pautler, "A Review of the Economic Basis for Broad-Based Horizontal-Merger Policy," *Antitrust Bulletin*, Fall 1983, 571-651; Noel D. Uri and Malcolm B. Coate, "The Department of Justice Merger Guidelines: The Search for Empirical Support," *International Review of Law and Economics*, 1987, 113-20; F. M. Scherer and David Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin, 3d ed., 1990, chap. 11). Also, the concentration thresholds in the Merger Guidelines are intended to implement the incipency standard of Section 7 of the Clayton Act. The Department of Justice itself has explicitly recognized that the market concentration thresholds in the Guidelines are not applicable to behavioral regulation. In contrast to the Herfindahl-Hirschman Index (HHI) threshold of 1800 (which corresponds to between 5 and 6 equal-sized competitors) used in merger evaluation, in its analysis of oil pipeline markets the Department of Justice concluded that in making an initial determination about whether to deregulate certain pipelines it was appropriate to use a threshold of four firms (which corresponds to an HHI threshold of 2500 or higher):

This HHI standard for initial high-risk status for pipeline markets is higher than the 1800 level used to demarcate highly concentrated markets in the Department's Merger Guidelines because of the different purpose served by the index. A higher threshold is used for suggesting that pipeline regulation may be appropriate than for determining that a merger is liable to lead to the exercise of market power because regulation itself imposes significant costs, whereas the economies foregone, if any, when a particular merger is prevented are apt to be less significant. (*Competition in the Oil Pipeline Industry: A Preliminary Report*, May 1984, at 28.)

37. Besen and Burnett indicate that capacity is an appropriate basis for measurement of market shares "Because the available evidence suggests that firms may move with relative ease from the provision of one mobile telecommunications service to another" (Besen and Burnett at 35). They

argue that the appropriate measures of market shares and concentration are based on *effective* capacity, which takes account of the differences in bandwidth requirements per unit of information transmitted for analog and digital services (Besen and Burnett at 36). As long as cellular systems offer analog services, their shares of effective capacity will be less than their shares of bandwidth, because PCS and ESMR services are all digital. Forecasts of market shares and concentration based on effective capacity are complicated by the need to make assumptions about (i) the amount of bandwidth cellular systems will need to allocate to analog services in coming years, (ii) the relative efficiency of analog and digital services in transmitting information, (iii) the amount of bandwidth cellular providers and other entities will obtain in future PCS license auctions, and (iv) the bandwidth available to ESMR.

38. Using some of the same assumptions made by Besen and Burnett, suppose that cellular systems devote 10 MHz to analog, and that digital technology permits a 6-fold increase in effective capacity compared to analog cellular. Suppose also that the three 30 MHz and the three 10 MHz broadband PCS licenses are awarded to six independent non-cellular firms, and that SMR/ESMR bandwidth is consolidated and digitized by one additional company with 10 MHz. In this case, based on the Besen-Burnett methodology, each cellular system would have a 10.2% share of effective capacity, each 30 MHz PCS provider would have a 18.4% share, and each 10 MHz PCS provider and the ESMR provider would have a 6.1% share. The HHI would be 1370.

39. On the other hand, if one assumes that each cellular provider would obtain a 10 MHz PCS license, the cellular shares would be 16.3% and the HHI would be 1620. If in addition cellular systems convert entirely to digital technology, their shares would be 19.4% and the HHI would be 1651.

40. Finally, if one assumes, for the sake of argument, that a minimum of 30 MHz of bandwidth will be necessary to provide some cellular-type services competitively, the cellular shares for those particular services

(assuming a uniform fraction of the capacity of each provider could be devoted to them) would be 21.9% and the HHI would be 2012. Of course, this list does not exhaust the possibilities.

41. These calculations ignore the possibility that providers with narrowband licenses, including paging licenses and narrowband PCS licenses, users of the 20 MHz allocation for unlicensed spectrum, users of UHF spectrum (in the event of a relaxation of Commission regulations), or satellite-based services will enter as new providers of competitive cellular-type services during the next several years. Hausman predicts that less than one-third of the spectrum allocated to paging as of 1992 will be used for paging by the year 2000 (Hausman at 7-8), which suggests that it could be used for other services.<sup>2</sup>

42. The NYPSC notes that in three MSAs in its state one carrier has a market share of 70 percent to 80 percent. The NYPSC suggests that such carriers may be dominant firms and have "the incentive and opportunity to engage in anticompetitive pricing" (NYPSC Petition at 9). Merely having a high market share is not enough for a firm to be dominant or to exercise unilateral market power, however. A firm is not dominant if it faces a rival or rivals that could rapidly expand their sales and market share in response to anticompetitive behavior by the larger firm. The NYPSC offers no evidence that the second cellular carrier in these MSAs could not rapidly increase its share. In fact, in two of these MSAs, the smaller firm apparently gained 10 percentage points of market share in just one year,

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<sup>2</sup> It has been suggested that there may be four or five companies in most cities (*Wall Street Journal*, Feb. 11, 1994, at R22, citing a consultant at Arthur D. Little; Edward M. Greenberg and Catherine M. Lloyd, "Telecommunications Services: POP Out: The Changing Dynamics of the Cellular Telephone Industry," *U.S. Investment Research*, Morgan Stanley, Apr. 23, 1991, at 20). If there are four or five companies with equal shares of effective bandwidth, the cellular shares would be 25 percent or 20 percent and the HHI would be 2500 or 2000. However, if the number of competitors in an area is a result of economies of scale and the size of the markets, there may be spectrum available for a new entrant in the event of anticompetitive behavior.

which suggests that their larger rival can hardly be called dominant. Furthermore, cellular carriers are likely to face substantial additional competition and entry in the near future.

43. One cannot draw conclusions regarding either the performance of CMRS markets or the need for government regulation of prices from market shares and concentration alone, as the NYPSC has done (NYPSC Petition at 4). In evaluating price regulations, one must also evaluate entry conditions, conditions affecting the likelihood of collusion, empirical evidence on the actual performance of the market, and the costs and effectiveness of regulation.

#### F. *Performance*

44. The NYPSC presents evidence that it concedes is "mixed" on whether rates in New York are unjust or unreasonable (NYPSC Petition at 4). In addition to high concentration in each MSA, which I have addressed above (§§35-43), the economic evidence on which the NYPSC relies is: (i) cellular rates exceed landline rates, (ii) cellular companies earn high profits, (iii) increased use suggests cellular service is becoming an essential service, (iv) the number of complaints, while low, is increasing, and (v) rates appear to be declining. This evidence is not sufficient to justify regulation. In this section, I examine the evidence offered by the NYPSC and find that none of it, individually or collectively, demonstrates the exercise of market power. Claims about anticompetitive behavior are based on faulty economic analysis. By contrast, there is evidence of competitive behavior, and cellular customers have been benefiting from increasing service at declining real prices.

##### 1. Output and Capacity

45. Cellular capacity, geographic coverage, and output have expanded rapidly throughout the past decade. The number of cellular subscribers increased from near zero in 1984 to 6.4 million in June 1991 and 19 million in the first half of 1994 (Hausman at 10; *Washington Post*, Sept. 6, 1994, at B4, citing the Cellular Telephone Industry Association). Besen *et*